

IN THE CLAIMS

1. (Currently Amended) A system ~~for broadcasting auxiliary data within a modulated video signal to a hand-held device operatively associated with a slot, the system comprising:~~

~~the broadcast source broadcasting the modulated video signal;~~

~~an interface device electronically coupled to the hand-held device through the slot, the interface device comprising an interface microcontroller, including a wireless data receiver and a decoder electronically coupled to the interface microcontroller for receiving the the wireless data receiver being capable of wirelessly receiving a modulated video signal from the a broadcast source, and the decoder electronically coupled to the interface microcontroller and the wireless data receiver for demodulating to decode and reproduce auxiliary data from the modulated video signal and reproducing the auxiliary data, and an interface operatively associated with the interface microcontroller for transferring the auxiliary data to the hand-held device by use of an interface protocol through the slot; and~~

~~the a hand-held device operatively associated with the including a slot, comprises a device microcontroller for processing the auxiliary data received by use of the interface protocol from the interface device and the slot for connecting the interface device to the hand-held device the slot capable of coupling the interface device with the hand-held device to receive and process the auxiliary data from the interface device and provide a benefit in response to receipt of the auxiliary data.~~

2. (Currently Amended) The system of claim 1, wherein the ~~interface device~~ hand-held device ~~comprises~~ includes storage disposed on the interface device and coupled to the interface microcontroller for capable of storing the auxiliary data.

3-4. (Cancelled)

5. (Currently Amended) The system of claim 1, wherein the hand-held device ~~with the slot~~ comprises ~~wireless Internet access~~ includes a network access module;
wherein the benefit is redeemable or provided through the use of the network access module.

6-29. (Cancelled)

30. (Currently Amended) The system of claim 1, wherein the hand-held device is a smart card, a mobile phone, a personal digital assistant (PDA), a gaming device, a digital music device, or a flash memory card.

31-38. (Cancelled)

39. (Currently Amended) The system of claim 1, wherein the ~~circuitry~~ decoder comprises:
an analog pre-filter ~~operatively associated with the interface microcontroller to prepare~~ the modulated video signal for digitization;

a vertical detect/signal strength module operatively associated with ~~the interface microcontroller and the analog pre-filter to generate a vertical synchronization signal and lock to~~ the vertical synchronization signal; and

an auxiliary data detector operatively associated with ~~the interface microcontroller and the analog pre-filter to measure strength of the modulated video signal after removal of an~~ underlying portion of the modulate video signal.

40. (Currently Amended) The system of claim 39, wherein the analog pre-filter comprises:
a current voltage converter ~~for converting to convert~~ the modulated video signal into a
current;

an automatic gain control electrically connected to the current voltage converter ~~for measuring to measure~~ signal strength and adding gain to or removing alter gain from of the modulated video signal;

a low pass filter electrically connected to the automatic gain control ~~for removing to~~

remove high frequency noise from the modulated video signal; and

a high pass filter electrically connected to the low pass filter ~~for removing~~ to remove low frequency noise from the modulated video signal.

41. (Cancelled)

42. (Currently Amended) The system of claim 39, wherein the vertical detect/signal strength ~~circuitry~~ module comprises:

a signal strength detector ~~for polarizing, transitioning, inverting and integrating to~~
polarize, transition, invert and integrate the modulated video signal; and

an analog vertical sync ~~for generating~~ to generate a vertical synchronization signal and
~~locking~~ lock to the vertical synchronization signal.

43. (Cancelled)

44. (Currently Amended) The system of claim 39, wherein the auxiliary data detector comprises:

a horizontal notch filter ~~for removing~~ to remove a portion of the modulated video signal
at a horizontal line scanning rate,

a low pass filter with cutoff electrically coupled to the horizontal notch filter ~~for extra~~
~~filtering of~~ to filter a remaining portion of the modulated video signal;

a band pass filter electrically coupled to the low pass filter with cutoff ~~for additional~~
~~filtering of~~ to filter the remaining portion;

a signal rectifier electrically coupled to the band pass filter ~~for integrating~~ to integrate the
remaining portion; and

a signal energy integrator electrically coupled to the signal rectifier ~~for measuring~~ to
measure the strength of the remaining portion.

45. (Cancelled)

46-49. (Cancelled)

50. (Currently Amended) A method of modulating a video signal with auxiliary data, the video signal having one or more frames, each frame having a first field and a second field, the method comprising:

selecting at least one of the one or more frames to modulate;

splitting the first field and the second field a first portion and a second portion of the one or more selected frames a frame into two or more a plurality of segments; and

modulating each of the two or more segments in either the first field or the second field of the one or more selected frames, wherein modulating a selected segment in the first field of each of the one or more selected frames encodes a logical one and modulating a selected segment in the second field of each of the one or more selected frames encodes a logical zero

modulating the video signal with auxiliary data by altering a pixel value of a plurality of pixels of at least one of a selected segment of the first portion or the second portion for the plurality of segments, the modulated video signal including a plurality of data bits encoded within the frame.

51-55. (Cancelled)

56. (Currently Amended) A method of detecting auxiliary data modulated within a video signal, the video signal having one or more frames, each of the frames having a first field and a second field, the first field and the second field, each having one or more segments, the method comprising:

obtaining the one or more frames a frame of the a video signal from the a display device via a receiver operative with a device; and

determining whether auxiliary data is present in the video signal as received by the device frame by performing a field comparison on the one or more a plurality of segments of the a first field and the corresponding one or more a plurality of corresponding segments of the a second field for each of the one or more frames the frame.

57. (Currently Amended) The method of claim 56, wherein ~~the first field and the second field each have an intensity~~, further comprising wherein the field comparison includes:

subtracting ~~the intensity of the one or more plurality of corresponding segments of the second field from the corresponding one or more plurality of segments of the first field, or~~

subtracting the intensity of the one or more plurality of segments of the first field from the corresponding one or more plurality of corresponding segments of the second field, or combinations thereof.

~~as the field comparison.~~

58. (Currently Amended) The method of claim 57, further comprising:

decoding a logic one as the auxiliary data when ~~for each of the one or more segments a segment of the first field are is encoded and the corresponding one or more segments a corresponding segment of the second field are is not encoded;~~ and

decoding a logic zero as the auxiliary data when ~~for each of the one or more segments the segment of the first field are is not encoded and the corresponding one or more segments corresponding segment of the second field are is encoded.~~

59. (Currently Amended) The method of claim 57, further comprising:

decoding a logic one as the auxiliary data when ~~for each of the one or more segments a corresponding segment of the second field are is encoded and the corresponding one or more segments a segment of the first field are is not encoded;~~ and

decoding a logic zero as the auxiliary data when ~~for each of the one or more segments the corresponding segment of the second field are is not encoded and the one or more segments segment of the first field are is encoded.~~

60-71. (Cancelled)

72. (Currently Amended) The method of claim ~~69~~ 57, further comprising:
~~determining whether every data packet has been captured; and~~
~~providing a benefit to a user of the device when every data packet has been captured~~
based on the determining of the auxiliary data.

73. (Previously Presented) The method of claim 72, ~~further comprising selecting~~
~~textual information as~~ wherein the benefit is textual information, a prize, a coupon, a game, a
special access privilege, or combinations thereof.

74-80. (Cancelled)

81. (Currently Amended) The method of claim ~~77~~ 57, further comprising:
seeking and synchronizing to a vertical retrace period of the video signal;
wherein the determining of whether the auxiliary data is present is in accordance with the
synchronizing to the vertical retrace period.

82. (Currently Amended) The method of claim 81, wherein seeking and synchronizing to a
the vertical retrace period of the video signal comprises:
seeking a first display section of a picture presented on ~~the~~ a display device is black;
waiting a sufficient amount of time for a vertical refresh of the picture;
determining if a second display section of the picture presented on the display device is
black;
looking beyond the first display section when the picture presented on the display device
for the second display section is not black; and
locking on a vertical retrace period when the second display section is black.

83. (Previously Presented) The method of claim 82, further comprising releasing the
lock on the vertical retrace period after a few seconds.

84-86. (Cancelled)

87. (New) The system of claim 1, wherein the network access module is a transceiver.
88. (New) The system of claim 1, wherein the wireless data receiver is an optical detector.
89. (New) The system of claim 1, wherein the data receiver is a radio frequency detector.
90. (New) The system of claim 1, wherein the slot is a secure digital (SD) slot.
91. (New) The system of claim 1, wherein the auxiliary data is encoded within the modulated video signal in a substantially invisible way.
92. (New) The method of claim 50, wherein the first portion is a first field of the frame and the second portion is a second field of the frame.
93. (New) The method of claim 50, wherein the plurality of segments is split into equal sized segments.
94. (New) The method of claim 50, wherein the pixel value is intensity.